



IUID and Readiness Reporting

Aligning Maintenance to Readiness



USFF, N43
13 January 2011



How does MFOM Help

MFOM 2.0 Provides 3 Significant Tools

Material Readiness Reporting Tool (FRP)

- ***MFOM calculates and reports a percentage of readiness for shipboard equipment and systems based on the documented material condition***
- ***MFOM uses standard material reporting tools***

Screening Value for Maintenance Actions (Lifecycle)

- ***MFOM provides each maintenance action a numerical value based on the Equipment Operating Capability (EOC) and system impact***
- ***This allows for the prioritization of maintenance actions based on their contribution to material readiness***

Material Readiness - Resources Tool (Cost)

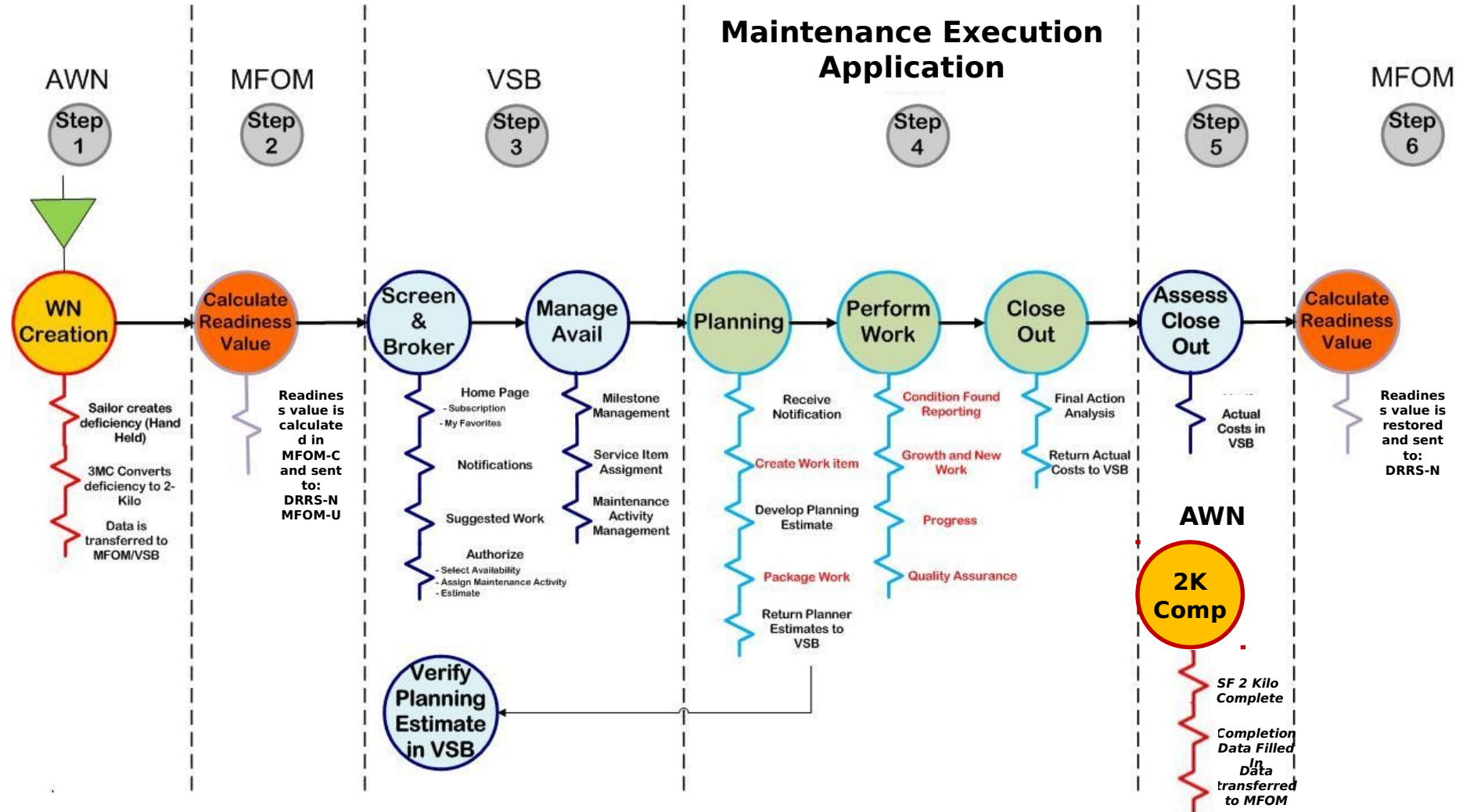
- ***MFOM identifies the funding required to reach a certain level of material readiness based on the documented material condition***



-

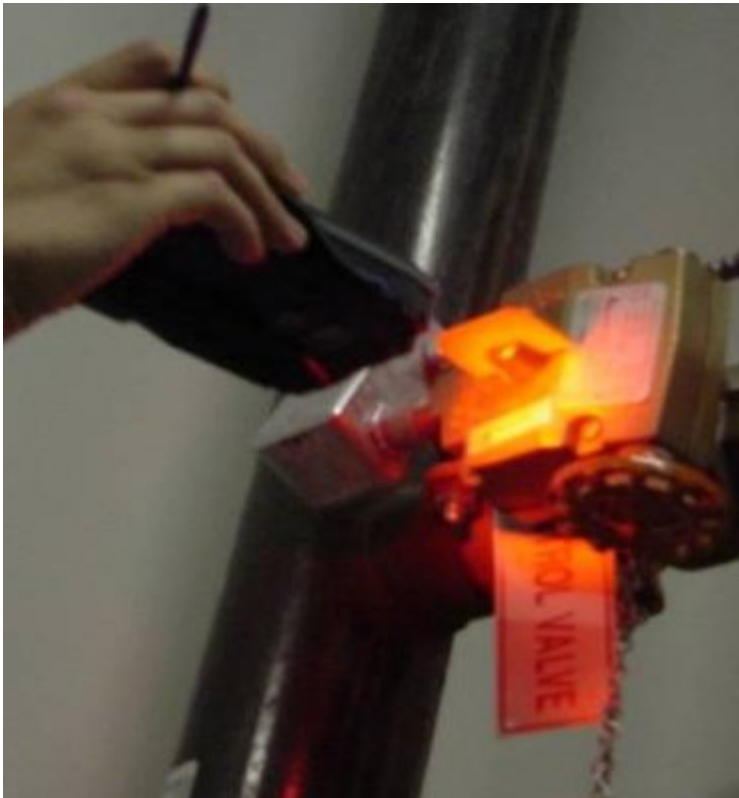


Basic Process

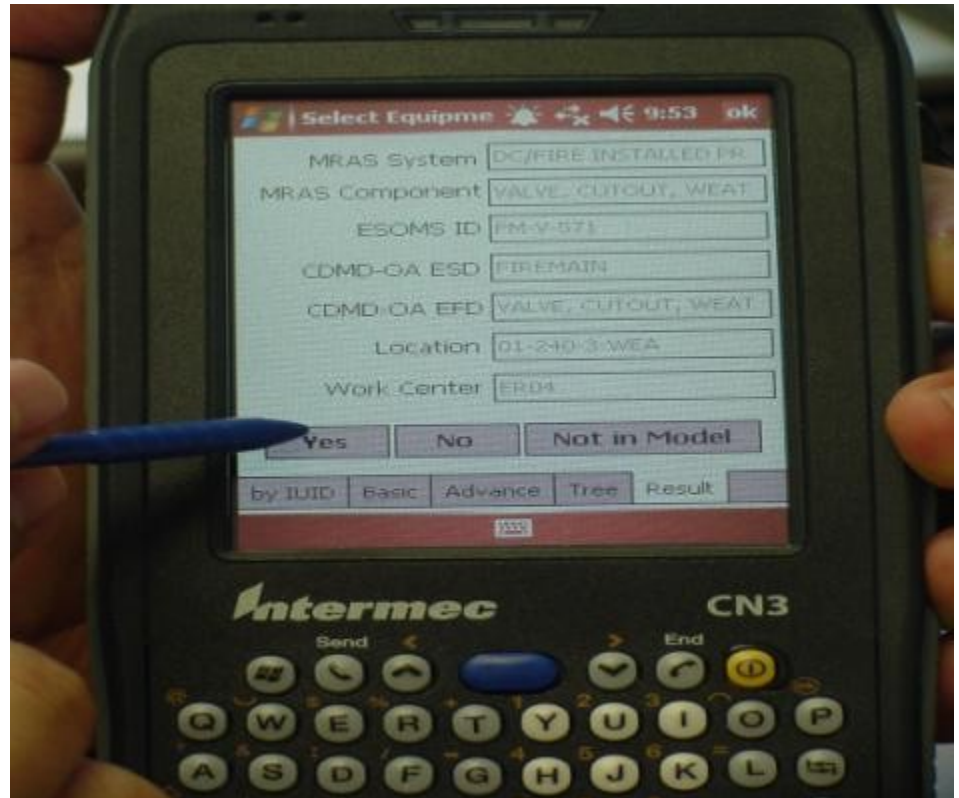


Handheld Use

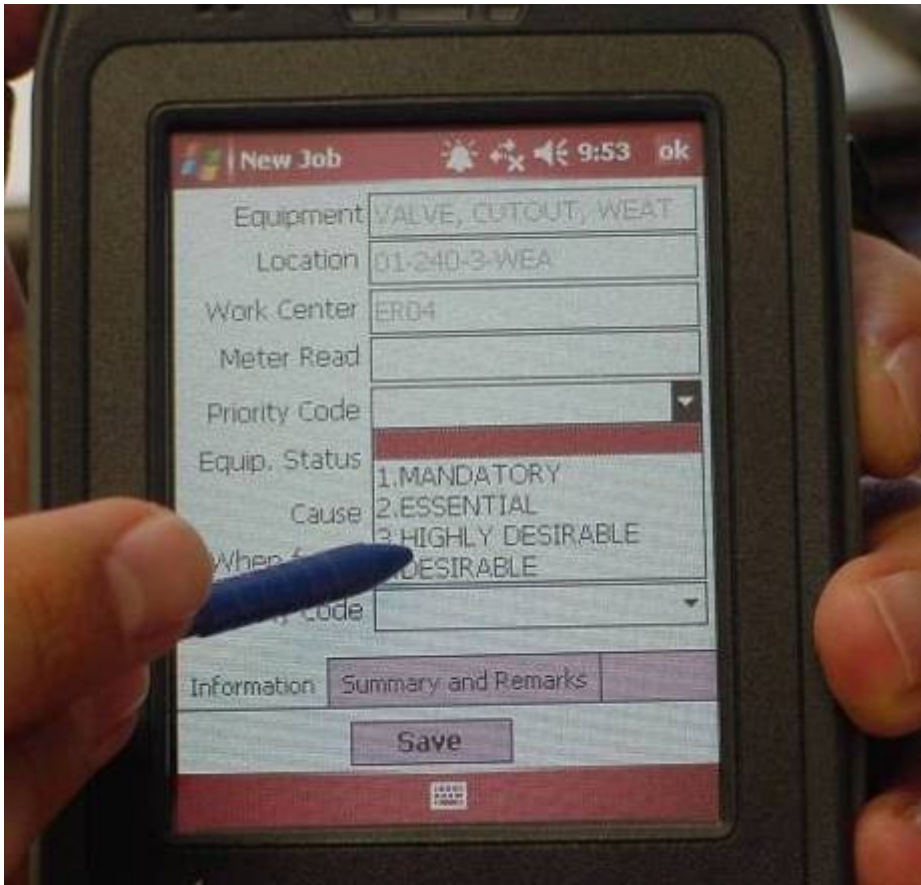
Maintainer Scans Item using handheld scanner



IUID links item to Model and Equipment Information



Handheld Job Creation



The Sailor only needs to fill in 8 fields:

- 6 drop down menus***
- Summary and Remarks***

Then saves and uploads the work candidate for review

Creating Job



Operational Performance Value Definition

Totally Inoperative: 0.0 - Object does not work at all.

Should not be operated/Battle Short: 0.1 - Object not functioning. Secure or turn off immediately. Further operation would be a threat to personnel safety.

Repair before operation: 0.2 - Object not functioning within designed parameters and may only be operated under emergency conditions. May be threat to personnel safety.

Severely degraded with major operational restrictions: 0.3 - Object not operating correctly or performing intended functions. Not a threat to personnel safety but further equipment damage may occur with continued operation.

Restricted operation. Significant discrepancies: 0.4 - Object not operating correctly and no means or alternatives allow the object to do everything it was designed to perform.

Operable with discrepancies that affect performance. No restrictions on operation: 0.5 - Object is capable of performing intended functions, but not to all designed performance standards, or not capable of performing required functions in all operating modes.

Fully operable: 1.0 - Object appears to be in very good material condition, it has no evidence of corrosion or noticeable discrepancies. Notification created only for preventive maintenance actions or ordering parts.

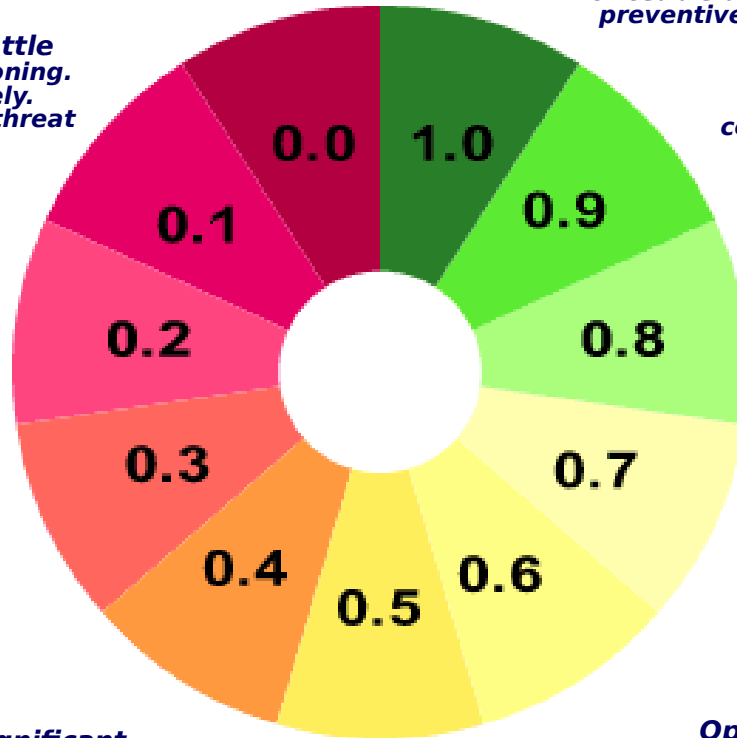
Fully operable with cosmetic discrepancies: 0.9 - Object works with only cosmetic discrepancies, has slight corrosion. The documented discrepancy does not affect performance, there are no anticipated problems or a need for troubleshooting.

Fully operable with no performance impacting discrepancies: 0.8 - Object works with no loss in performance but has minor discrepancies or minimal corrosion. Problems are anticipated or troubleshooting is necessary. Minor redundancy impacted with no effect on performance.

Operable with minor discrepancies that do not impact performance: 0.7 - Object works with no loss in performance but has significant discrepancies that need to be corrected or monitored. One of many modes may be inoperative. Minor corrosion.

Operable with discrepancies that could potentially impact performance in the future. No restrictions: 0.6

- Object works with no current loss in performance but performance degradation is anticipated. Significant discrepancies need to be corrected or troubleshooting initiated to prevent performance degradation. Corrosion could impact performance if not corrected.



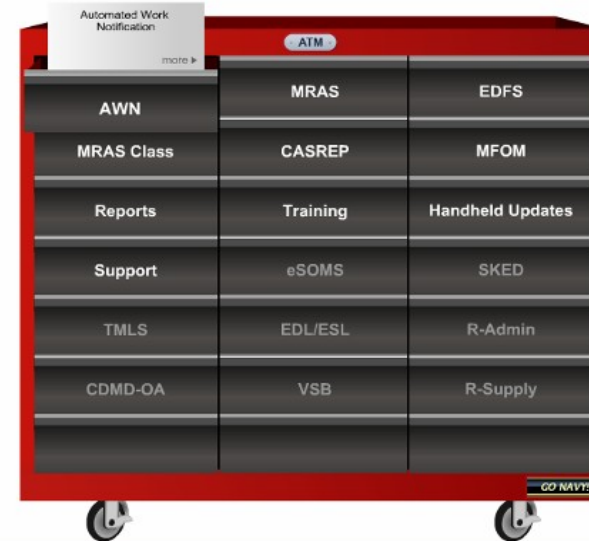
ATM Interface



The CN3 is docked and the file is uploaded to AWN for CoC update and review

AFLOAT Toolbox for Maintenance

Toolbox | User Login Passwords | User Administration | Application Administration | Log Out - LEEKER



Drawer Opens and Application Launches



Work Notification

FirstPreviousNextLast80 of 122

Search My Work Centers

EICB101000

HSC311222

RIC66A070002

RIN00FYD

Work Notification

Comments

Parts Data

Completion Data

Job Status: 2 KILO

JCN: 20126EA012228

Equipment: DIESEL ENGINE

When Discovered: 2 - NORMAL OPERATION

Cause: 7 - NORMAL WEAR AND TEAR

EOC Values: 0.7

Meter Reading:

Summary: #2SSDG LOW BOOST PRESSURE

Problem: CONDITIONS FOUND FROM LCS-1 MACHINERY RELIABILITY DAILY STATUS SUMMARY REPORT INDICATE BOOST PRESSURE LOW. RIGHT SIDE BOOST IS LOWER THAN LEFT SIDE BOOST. INADEQUATE BOOST AIR WILL CAUSE ELEVATION IN EXHAUST GAS TEMPERATURES.

Recommendation: REQUEST MAINTENANCE CONTRACT PROVIDER TO TROUBLESHOOT LOW RIGHT SIDE BOOST PRESSURE, CHECK FILTER FOR REPLACEMENT AND TURBO CHARGER FOR CLEANAING. SUBMIT CFR WITH

Rate/First Contact: E-8 GEREAU

Originator: LENHEKE, J

Work Center: EA01

Assist Work Center:

Assist UIC:

Priority: 4 - DESIRABLE

Deferral Reason: 6 - LACK OF FACILITIES/CAPABILITIES

Safety Code:

Key Event:

Type Avail: 1 - DEPOT

SF MHRS EXP: 2

CASREP: ☒

Equipment Status: 1 - OPERATIONAL

Date Discovered: 7/30/2010 1:34:42 PM

Avail ID:

Second Contact: LCDR BARROWS

Service Flag: 0 - Condition Based Maintenance

Deadline Date:

SF MHRS REM:

Standard 2K format - IUID link improves tracking of equipment from cradle to grave

Can Export to CASREP - IUID links CASREP to maintenance work notification



Comments

AWN Jobs

USS GRIDLEY (Active) | Log Out KIP.FULTON

USS GRIDLEY
UIC:23151

Automated Work Notification
Product of MFCM
Ver: 1.2.0.1053

Home Create New View / Edit Functions Reports Help Admin

First Previous Next Last 80 of 122

Search My Work Centers

EIC	HSC	RIC	RIN
B101000	311222	66A070002	00FYD

Work Notification Comments Parts Data Maintenance Module

Ship's Force Maintenance Team GDSC

FOUND DURING MAINTENANCE REQUIRES PART TO REPAIR

Zoom Add Zoom Add Zoom Add

TYCOM Tech Authority

Zoom Add Zoom Add

Supply U-NNPI

PART ORDERED W-005 PROVIDED BY USS SAN ANTONIO

Zoom Add Zoom Add

Save

***Captures
maintenance
dialogue***

***Improves
maintenance
history***



Part Ordering

Search My Work Centers

First Previous Next Last 80 of 122

Search Fields

EIC	HSC	RIC	RIN
B101000	311222	66A070002	00FYD

Work Notification Comments Parts Data Completion Data

Order Parts

Work Center EA01 JCN 20126EA012228
APL 66A070002 Equipment Name DIESEL ENGINE

The number of items displayed is 10

<input checked="" type="checkbox"/>	NIIN	Item Name	COSAL Type	Unit of Issue	Unit Price	Part Number	CAGE	COG
<input checked="" type="checkbox"/>	000137784	PACKING, PREFORMED	H	EA		D3114620A	A0106	
<input type="checkbox"/>	001727223	O-RING	H	EA		D3114650A	A0106	
<input type="checkbox"/>	009896263	BELT-COG	H	EA		65356F01	A0106	
<input type="checkbox"/>	012451414	O-RING	H	EA		60275F01	A0106	
<input type="checkbox"/>	013538397	SLEEVE,NOZZLE HOLDE	H	EA	24.17	68096F01	A0106	9B
<input type="checkbox"/>	013641653	BEARING,ROLLER,NEED	H	EA		760557637U01	A0106	
<input type="checkbox"/>	013641662	SWITCH,GOV PICK-UP	H	EA		75508F91	A0106	
<input type="checkbox"/>	013652547	SEAL RING,METAL	H	EA	58.34	79010F01	A0106	9B
<input type="checkbox"/>	013734694	GASKET	H	EA		79012F01	A0106	
<input type="checkbox"/>	013734871	GASKET	H	EA		70542F01	A0106	

1 2 3 4 5 6 7 8 9 10 ...

Able to order COSAL and Non-COSAL parts to support maintenance history and costs



Maintenance Planning

Maintenance Planning Tool

CalendarsMaintenance TasksEventsZone InspectionOut of CommissionAdministration

USS GRIDLEY
FULTON.TESTER logged in as Coordinator

Unscheduled Tasks

Search Unscheduled Tasks... Search Clear

Title

JCN

Test Event One

Test Key Event One

Test Milestone Two

TEST 0123151CF020377

OIL FILTERS NEED TO BE CHANGED23151EA010815

AAA23151EA010725

TEST MPT 0123151EA010754

TEST23151OT010178

DecemberJanuaryFebruary

2728293031123456789101112131415161718192021222324252627282930311234

TRANSUDCER DAMAGE
CA01

AIR CONDITIONING PLANT NO2
EA01

#2SSDG LOW BOOST PRESSURE
EA01

TEST NIM ON DEMO SITE
ER0

BBB
SS02

Page 1 of 1

Repaint ScreenPrint to PDFClear SelectionsDisable PopupsLegendFilters, Dates, & Details

Links to the
Maintenance
Planning Tool
(MPT) in
support of unit
maintenance
scheduling

Rollup Calculations

$$\text{Index} = \frac{[(\text{Min EOC}_{\text{c LVL 1}}) \times [(\text{Wt LVL 1}) + (\text{Sum WEOC LVL 1}) - (\text{WEOC LVL 1})]]}{(\text{Sum Weights in LVL 1})}$$

Warfare Area

NTA

Level 1

Level 2

Level 3

Level 4

Level 5

Level 6

Level 7

Mob E, Index = 0.64

NTA 3.8.1, Index = 0.64

Propulsion, Index = 0.64

Propulsion 1, Index = 0.64

Prop Gas Turbines, #1A, Index = 0.64

Lube Oil System, Index = 0.4

Gas Generator, Index = 0.4

Lube Oil System, Index = 0.4

VALVE, CUTOUT, SUPPLY, LUBO, GAS TURBINE NO 1A, EOC = 0

13 Functional Areas

1 Item

4 Items

2 Items

5 Items

7 Items

6 Items

11 Items

Material Condition Readiness



Scenario based material condition readiness

Work candidates impacting this mission

AWA	UPPER LIFE WORK	EFFECT	WCL	LOC	NARRATIVE	AVAIL	INTERACTIVITY	REC	WCL	LOC	WCL
ASU	168	0.01	DMC2041	0.1		A123	N	0			
ASU	163	0.08	DMC2043	0.3	REMOVE AND REPLACE C DUMP	A123	N	11.04			
ASU	167	0.78	PDG0812	0.8	PROVIDE INW-HOUSE	A123	N	41.18			
ASU	164	1.0	OTG0307	0.9	TAO VIDEO MONITOR FAILURE		N	52.56			
ASU	168	0.07	CNC2028	0.8	BND MO DRIVE		N	01.18			
ASU	138	0.08	DMC2043	0.8	CORRODED DRIP PAN		N	71.90			
ASU	62	0.02	DMC2043	0.8	HORN FLOW METER OUT OF CAL		N	73.24			
ASU	39	0.08	CSC3074	0.9	RIGHT VISION HAS BROKEN KNIFE		N	01.13			
ASU	114	0.01	OTG0813	0.8	MONITOR CUT OUT SWITCH		N	02.28			
ASU	42	0.07	CNC2010	0.9	BAD POWER SUPPLY IN MCP		N	04.67			
ASU	42	0.07	CNC2020	0.8	FUSE		N	04.67			
ASU	43	0.07	CNC2018	0.8	DAMAGED DELUSE HOSE		N	04.67			
ASU	43	0.07	CNC2018	0.8	DAMAGED DELUSE HOSE		N	04.67			
ASU	43	0.07	CNC2010	0.8	DAMAGED DELUSE HOSE		N	04.67			
ASU	44	0.07	CNC2018	0.8	BAD POWER SUPPLY IN MCP		N	04.67			
ASU	71	0.07	CNC2024	0.8	TRANSFORMER		N	04.67			
ASU	138	0.07	CNC2022	0.8	DAMAGED WOB CABLE ASSEMBLY		N	04.67			
ASU	138	0.07	CNC2010	0.8	DAMAGED DELUSE HOSE		N	04.67			
ASU	141	0.07	CNC2028	0.8	DAMAGED T5 AND T4 ON 43		N	04.67			
ASU	144	0.07	CNC2020	0.8	TRANSFORMER		N	04.67			
ASU	138	0.07	CNC2024	0.8	MA PERFORM 7211 R 28		N	04.67			
ASU	148	0.07	CNC2027	0.8	MA PERFORM 7211 R 28		N	04.67			
ASU	120	0.03	DMC1030	0.8	PUMP OILATION REQUIRED	B123	N	05.54			
ASU	124	0.03	DMC1032	0.8	POST DEPLOYMENT INSPECTION	B123	N	05.54			
ASU	123	0.04	DMC1031	0.8	CALIBRATION REQUIRED FOR GAUGES	B123	N	06.51			
ASU	128	0.06	DMC4181	0.8	STAPPED VALVE STEM	B123	N	08.47			
ASU	1	0.04	CDC204	0.8		B123	N	08.08			
ASU	1	0.04	CDC2025	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC10804	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC2022	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC10807	0.8	LOSS OF COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC10808	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC2023	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC10804	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	1	0.04	CDC10818	0.8	NO COMMS ON SWICS RADIO	B123	N	08.08			
ASU	98	0.08	DMC1045	0.8	FAULTY DISCREET OUTPUT CARD		N	08.53			
ASU	138	0.05	CDC10808	0.8	FAULTY SYNTHESIZER ON ROW 2		N	08.08			
ASU	6	0.08	DMC1042	0.8	MISSING RED LIGHT AND PLACARD		N	01.47			
ASU	128	0.07	DMC1034	0.8	CORROSION CONTROL REQUIRED		N	01.98			
ASU	48	0.07	DMC2034	0.8	CORROSION CONTROL DOOR 2-363-2		N	02.04			
ASU	138	0.03	CDC0306	0.8	18VAC 10 POWER FAILURE		N	02.24			
ASU	74	0.08	CDC10804	0.8	BT TEST FAILURE ON USC-55		N	02.24			



UPDATE:													
ASU	DVT	MOB	AAW	APW	ASW	STW	BRD	C2W	CCW	FSO	NCO	REW	
WARR	LIMITED LINE WORK	EFFECT	WIC-JSN	EOC	NARRATIVE	AVAIL	REPAIR ACTIVITY	REC	REDOB	WIC	EOC		
ASU	166	0.61	EM020441	0.3					A123		Y	8	■ ■
ASU	163	0.66	EM020439	0.0	REMOVE AND REPLACE C SUMP				A123		Y	11.04	■ ■
ASU	167	0.76	PE040612	0.6	PROVIDE WAREHOUSE				A123		Y	41.10	■ ■
ASU	164	1.0	CF020367	0.0	TAO VDDIS MONITOR FAILURE						N	52.58	■ ■
ASU	165	0.67	CM020226	0.0	BAD MO DRIVE						Y	61.19	■ ■
ASU	136	0.86	EM020383	0.8	CORRODED DRP PAN						Y	75.90	■ ■
ASU	62	0.92	EM020428	0.8	HOPM FLOW METERS OUT OF CAL						Y	79.24	■ ■
ASU	20	0.80	CG030676	0.6	NIGHT VISION HAS BROKEN KNOB						Y	81.13	■ ■
ASU	119	0.91	OT020672	0.8	MOVE DOC CUT-OUT SWITCH						Y	82.25	■ ■
ASU	42	0.87	CM020167	0.0	BAD POWER SUPPLY IN MCP						Y	84.47	■ ■
ASU	42	0.87	CM020201	0.8	FUSES						Y	84.47	■ ■
ASU	43	0.87	CM020195	0.0	DAMAGED DELUGE HOSE						Y	84.47	■ ■
ASU	43	0.87	CM020196	0.0	DAMAGED DELUGE HOSE						Y	84.47	■ ■
ASU	43	0.87	CM020197	0.0	DAMAGED DELUGE HOSE						Y	84.47	■ ■
ASU	44	0.87	CM020169	0.0	BAD POWER SUPPLY IN MCP						Y	84.47	■ ■
ASU	71	0.87	CM020234	0.0	TRANSFORMERS						Y	84.47	■ ■
ASU	135	0.87	CM020222	0.8	DAMAGED W2B CABLE ASSEMBLY						Y	84.47	■ ■
ASU	135	0.87	CM020192	0.6	DAMAGED DELUGE HOSE						Y	84.47	■ ■
ASU	141	0.87	CM020228	0.0	DAMAGED T3 AND T4 ON A3						Y	84.47	■ ■
ASU	144	0.87	CM020233	0.0	TRANSFORMERS						Y	84.47	■ ■
ASU	139	0.97	CM020224	0.8	IMA PERFORM 7211 R-26						N	84.47	■ ■
ASU	140	0.97	CM020227	0.8	IMA PERFORM 7211 R-26						N	84.47	■ ■
ASU	121	0.93	EM010350	0.6	PUMP CALIBRATION REQUIRED				B123		Y	85.54	■ ■
ASU	124	0.93	EM010352	0.8	POST DEPLOYMENT INSPECTION				B123		Y	85.54	■ ■
ASU	123	0.94	EM010351	0.6	CALIBRATION REQUIRED FOR GAGES				B123		N	86.51	■ ■
ASU	126	0.96	EM040181	0.0	STRIPPED VALVE STEM				B123		N	89.47	■ ■
ASU	1	0.94	CI020324	0.0					B123		N	89.66	■ ■
ASU	1	0.94	CI020325	0.0	NO COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	1	0.94	CSE10006	0.0	NO COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	1	0.94	CI020322	0.0	NO COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	1	0.94	CSE10007	0.0	LOSS OF COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	1	0.94	CSE10008	0.0	NO COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	1	0.94	CI020323	0.0	NO COMMS ON SIWCS RADIOS				B123		N	89.66	■ ■
ASU	1	0.94	CSE10009	0.0	NO COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	1	0.94	CSE10010	0.0	NO COMMS ON SIWCS RADIO				B123		N	89.66	■ ■
ASU	90	0.90	EM010349	0.0	FAULTY DISCRET OUTPUT CARD						Y	90.53	■ ■
ASU	138	0.95	CSE10030	0.0	FAULTY SYNTHESIZER ON RCVR 2						N	90.80	■ ■
ASU	6												

- New Readiness Values indicated after repairs are made.
- Software indicates which items should be repaired to support the next mission.

Brokering

WN Details -- Webpage Dialog

https://mfom.nmci.navy.mil/VSB/Admin/modal.aspx?ctr=~/awn/awn_manage.ascx&said=1E08712B4FCD408B983285FC5E4268FD&finkey=705197&title=WN%20Details
Certificate Error

WN Details - N - 20126 - USS FREEDOM - LCS 1 - EA01-2228 - Screening Required

sted Work

*CSMP Summary

#2SSDG LOW BOOST PRESSURE

*Problem Description

CONDITIONS FOUND FROM LCS-1 MACHINERY RELIABILITY DAILY STATUS SUMMARY REPORT INDICATE BOOST PRESUSRE LOW RIGHT SIDE BOOST IS LOWER THAN LEFT SIDE

REQUEST MAINTENANCE CONTRACT PROVIDER TO TROUBLESHOOT LOW RIGHT SIDE BOOST PRESSURE, CHECK FILTER FOR REPLACEMENT AND TURBO CHARGER FOR CLENAING. SUBMIT CFR

*Recommended Solution

Screen/Broker

Avail ID	Maint Activity	Funding Cd
A0A3	NSSA (NMD)	A

Mandays	Manday Rate	Material Cost	Total Cost
10	\$10.00	\$10.00	\$110.00

Screening Cd	Type of Work	WN Source	Orig Screening Value	MFOM Rec Avail
1	Original	MFOM		

Equipment Name

DIESEL ENGINE

*EOC	*T/A Cd	IUC Cd	Priority Cd	Safety Cd
0.7	1		1	0

Alt Nr	INSURV Nr
TYPC 0035 A	

CASREP DTG/Number	DFS

Package Name	*Contact	Rate
	SMOO	CIV

Comment Type Counts

DFS - 0	CASREP - 0	Lessons Learned - 0
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<< First

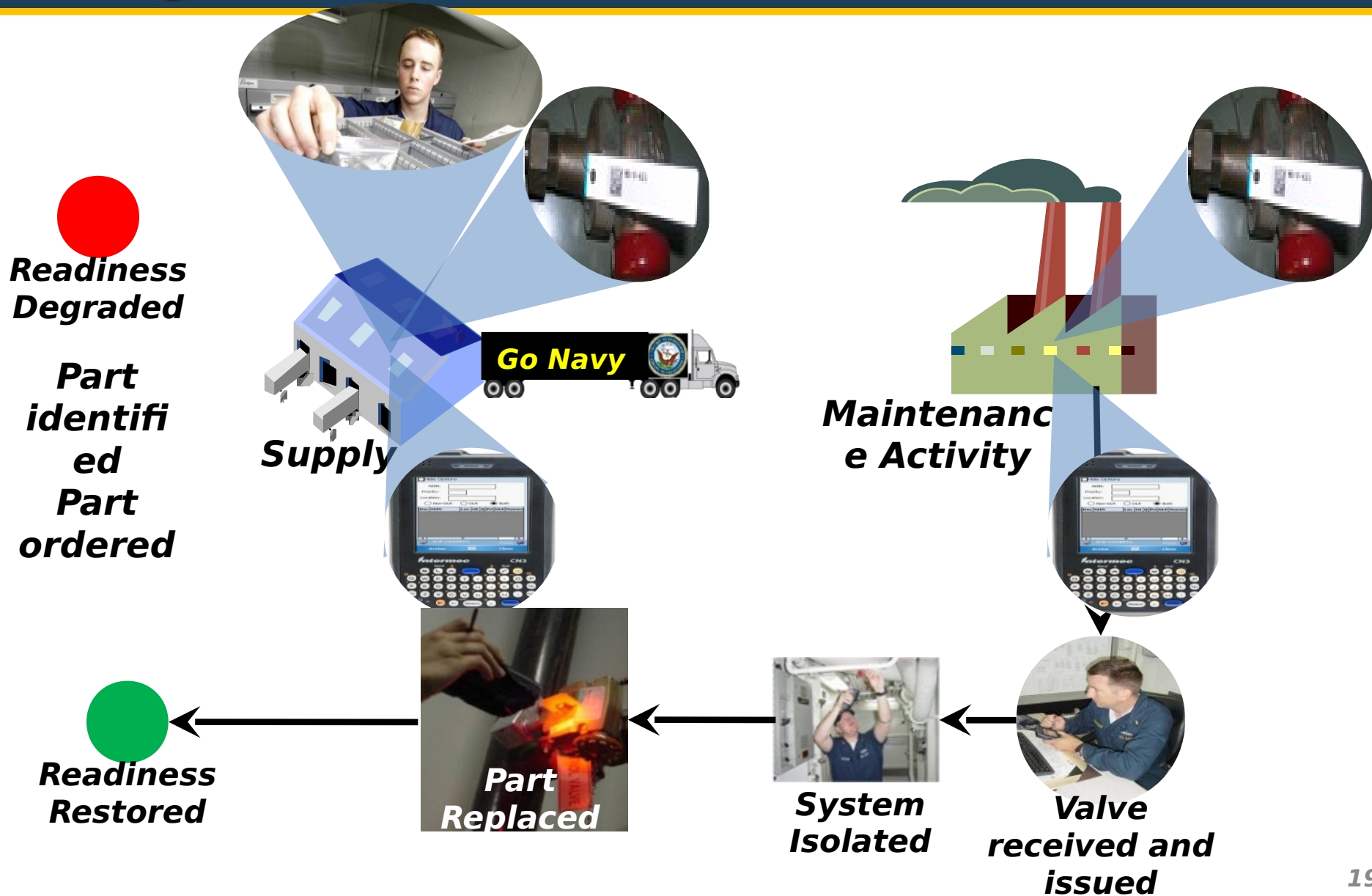
< Prev

Next >

Last >>

https://mfom.nmci.navy.mil/VSB/Admin/modal.aspx?ctr=~/awn/awn_manage.ascx&said=1E08712B4FCD408B983285FC5E4268FD&finkey=705197&title=WN%20Details
Internet

Repair and Restore

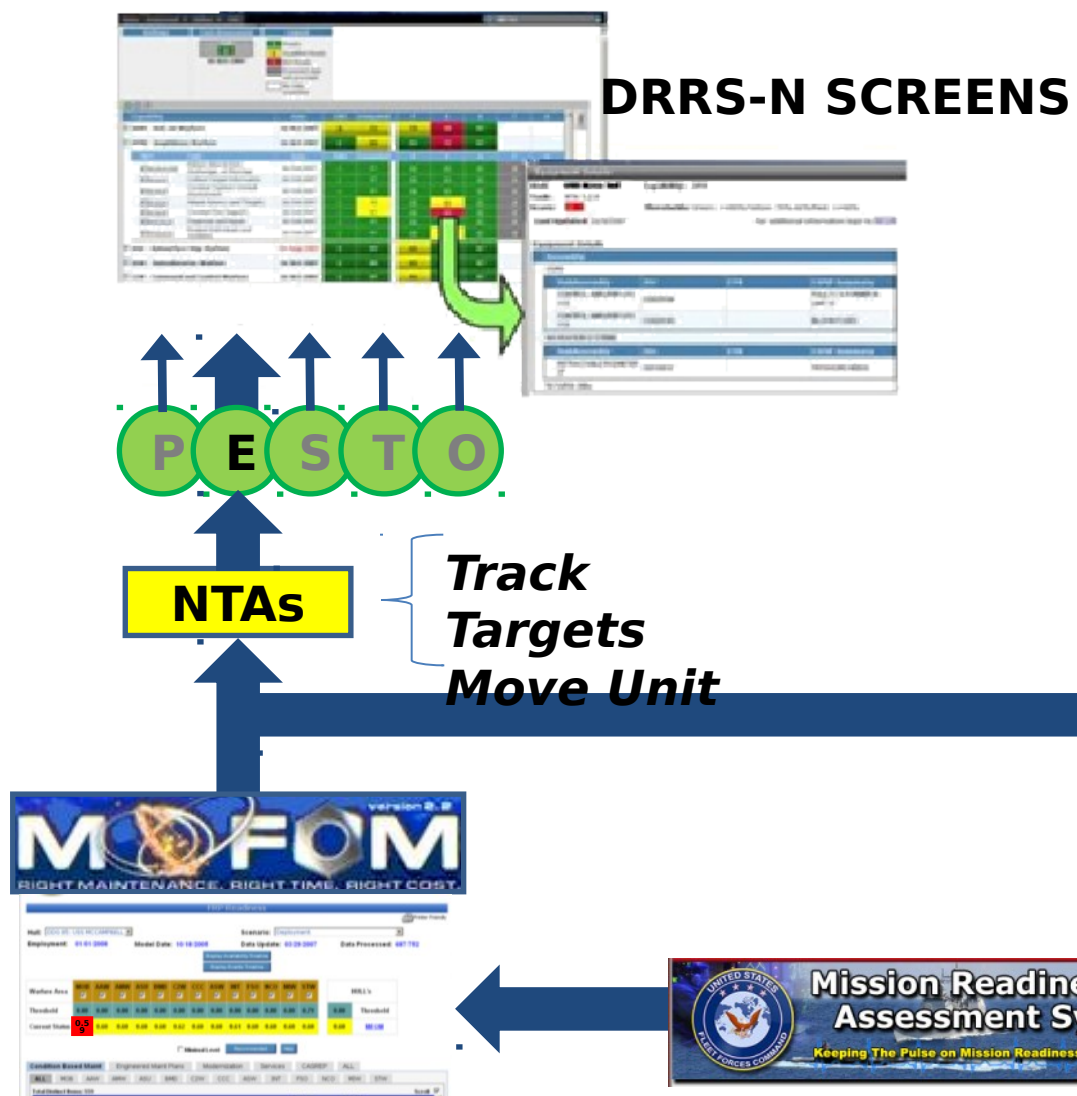


New Equipment Received

- The UII enables the item to be replaced using the handheld
- Removing the old item from the model and reporting status back to the National Registry
- Placing the new item in the model with its IUID
- The replaced part can be transferred to a repair facility or manufacturer for repair



Feeding Readiness Metrics



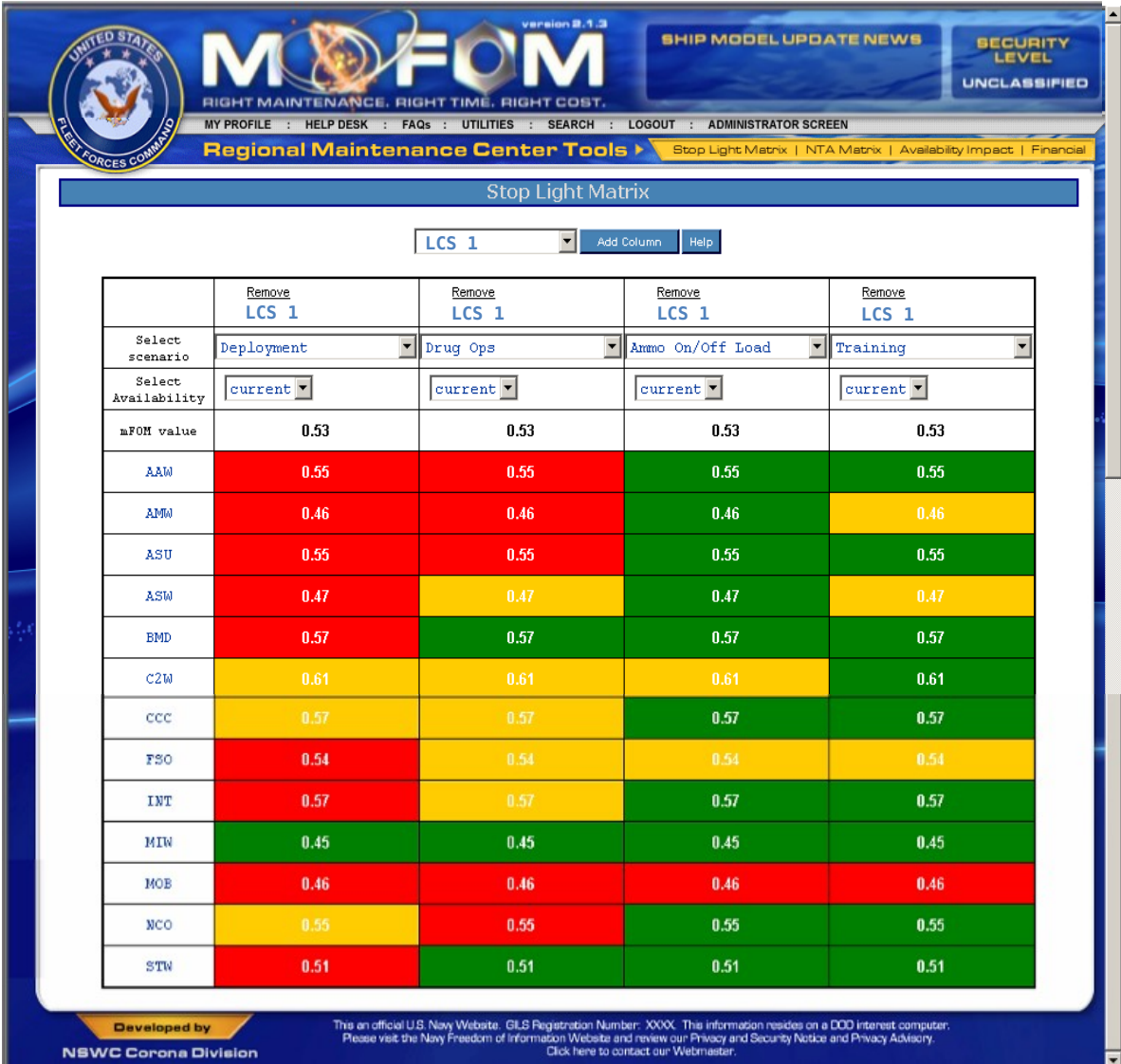
The equipment operability code (EOC) is reported from the ship to MFOM where algorithms are applied to determine readiness

MFOM forwards the readiness to DRRS-N with key data fields to support data mining

MFOM also provides readiness back to the ship




MFOM Scenarios



Same ship portrays different readiness for different missions

Different ships can be displayed at the same time

Readiness requirements are set by TYCOMs

Readiness change can be changed by selecting an

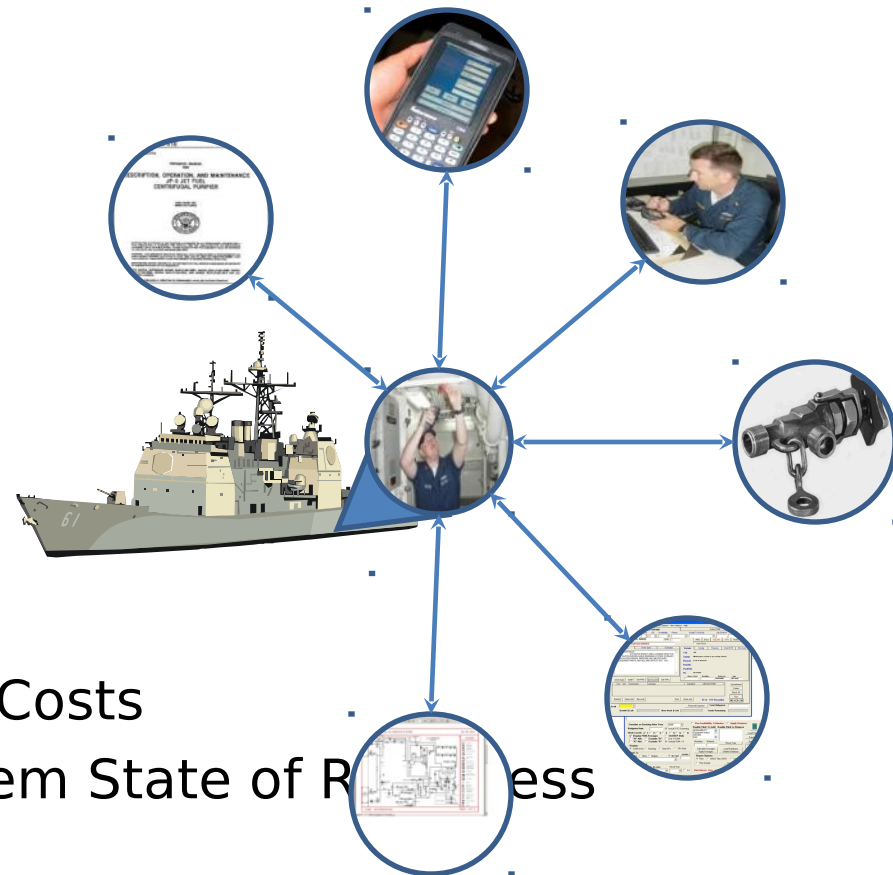


IUID Improves Readiness Reporting

- Identifies more closely the item that is deficient thereby more accurately reporting maintenance problems and their impact on readiness
- Reduces the number of mis-ordered parts
- Allows material history to be maintained for the life of the item
- Allows specific items that are “lemons” to be purged from the system thereby reducing maintenance costs in the long run

Additional Benefits of IUID

- Links User to Information
 - Warranties and/or Lease information
 - Logistics
 - Technical Manuals and Drawings
 - Parts and Parts Availability
 - Supply
 - Work Packages/Procedures
 - Material History
 - Material Reliability
 - Component Life Cycle
 - Readiness
 - Material Condition
 - Maintenance
 - Records
 - Procedures
 - PMS Cards
- Reduction in Total Ownership Costs
- Keeps track of Rotable Pool Item State of Readiness





The Plan

- Initiate full rollout in May 2011
 - Opportunistic Marking
 - Most common maintenance items marked during 1st yr
 - Remainder of equipment marked over next 2 yrs
- Implement with Navy Application Server Software releases
 - NIAPS 2.4 Planned for wk of 7 Feb 2011 (mail out)
 - Expect to be on 105 ships by July 2011



POA&M for IUID Way Ahead

• Base	Date
– Purchase Hardware	01/31/11
– 1 st Hardware delivery	02/28/11
– Handheld Certified	02/25/11
– 1 st Training conducted	03/04/11
– Commence Rollout with Software	03/07/11
– 105 Ships	07/29/11



Functional Index Number

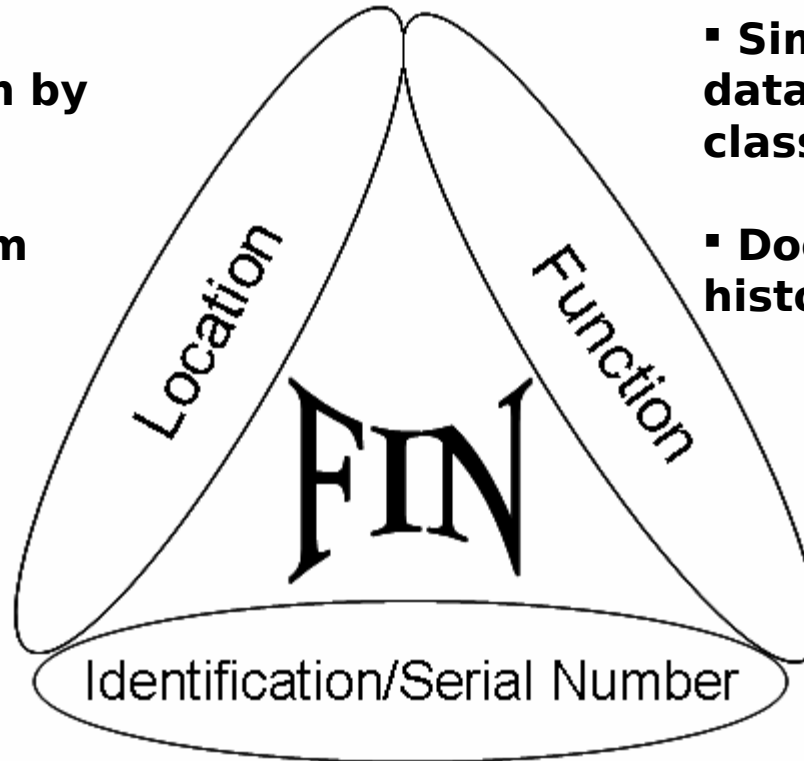
(Location)(Function)(ID)

Functional Index Number (FIN):

An alpha/numeric value assigned to all items in the model.

- Uniquely identifies every shipboard item by function
- Identifies same item across ship classes

Location:
Compartment Number, Compartment Name, or XYZ Coordinates



- Simplifies retrieving data across ship classes
- Documents material history

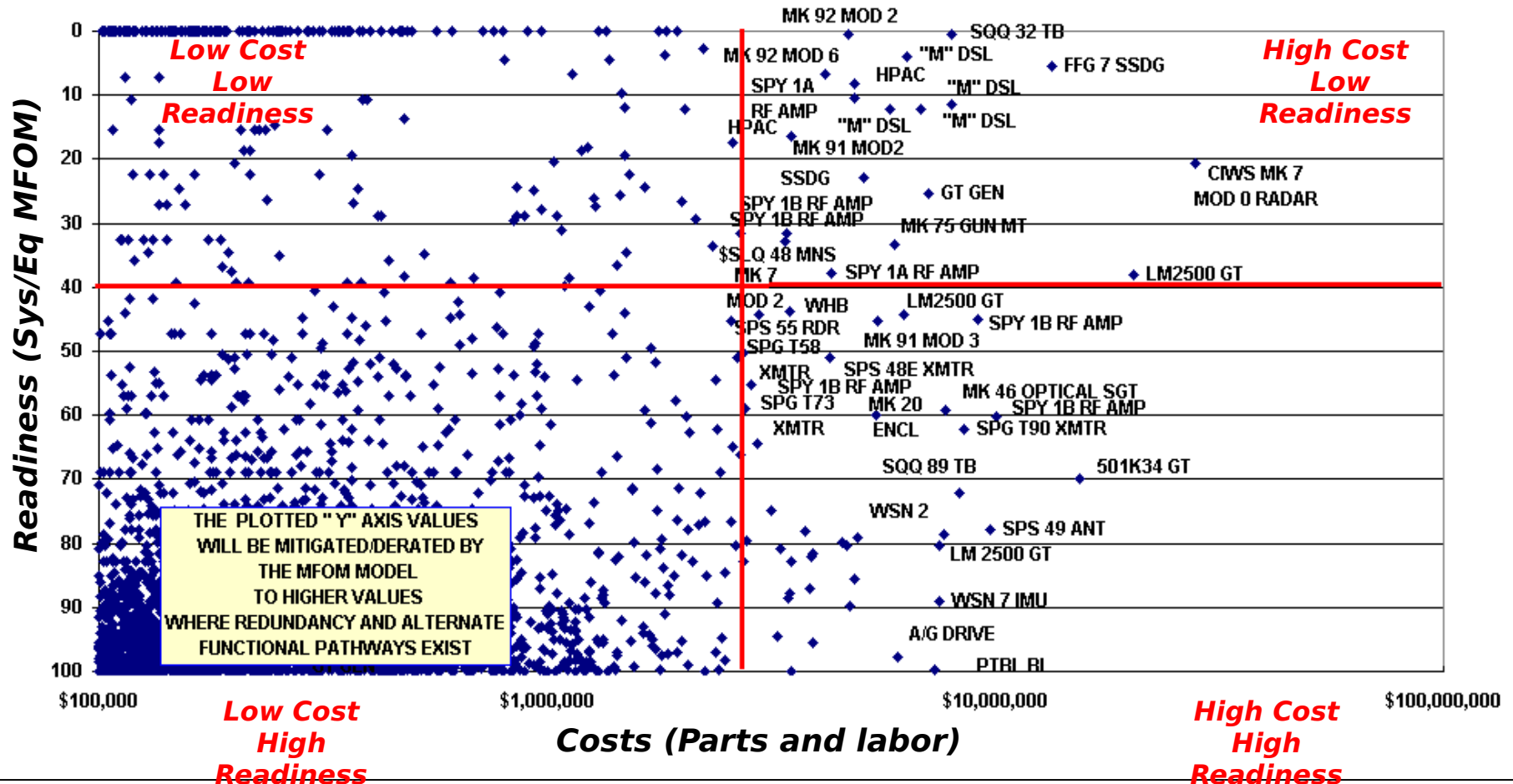
Function:
Defines the operational contribution, action, purpose or activity of an object.

Identification/Serial Number:

Applies an Item Unique Identifier to an object.
Can be composed of an IUID or Material Identification Number.

Facilitates Data Analysis

IMPACT CHART
EQUIPMENT LEVEL MFOM VS TOTAL OPERATING COST
(ONE MINUS PROBABILITY OF MISSION FAILURE IS USED TO REPRESENT MFOM)





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MFOM IUID Interfaces

